

Serial No: 10/563,385
Art Unit: 2617
March 1, 2007

PU030023
Customer # 24498

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Remarks/Arguments

The Office Action mailed January 4, 2007 has been reviewed and carefully considered.

Claims 1 and 6 have been amended. Claims 1-12 remain pending in this application.

Reconsideration of the above-identified application in view of the following remarks is respectfully requested.

Claims 1-6 and 8-11 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Published application no. 2003/0013452 A1 to Hunt et al.

The present principles, as claimed, disclose a macro cell capable of voice and data communications, and at least one micro cell with a smaller coverage area than the macro cell, where the macro cell communicates signaling information to the micro cell over a wireless link. It can be seen from Figure 1 of the present application that the micro cells 30₁ and 30₂ are connected to an Ethernet switch 34, which is, in turn, connected to a Wide Area Network (WAN) 26. It should be noted that the signaling information communicated wirelessly by the macro cell directly to the micro cell may consist of information such as authorization and authentication of the mobile communications device (see specification, page 5, lines 3-4), and/or codes to enable the mobile device 16 to communicate with the macro cell and micro cell simultaneously (See specification, page 5, lines 6-7). This signaling information is communicated to the micro cell from the SGSN 22 *through* the macro cell via the wireless link. Macro cells will generally have a direct physical, or back-haul, connection with the SGSN. By communicating the signaling information from the SGSN through the existing connection to the macro cell, and then to the micro cell, the present principles advantageously allow the elimination of the back haul link, as commonly used in the prior art, from the *micro cell* to the SGSN. Thus, when a micro cell is

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installed at a physical location, only an Internet connection need be installed, and the expense of a dedicated back haul link to the SGSN may be avoided.

In particular, the present principles, as embodied in claim 1, recite a step of “communicating signaling information *directly* between one micro cell and the one macro cell via a third wireless channel in response to access of the micro cell by the mobile communications device.”

The applicant respectfully asserts that Hunt, as cited by the Examiner, fails to disclose, or even suggest, “communicating signaling information directly between one micro cell and the one macro cell via a third wireless channel”, and that such communication happens “in response to access of the micro cell by the mobile communications device.”

Hunt discloses a cellular radio communications system with an umbrella macro cell 104 having a plurality of pico cells 108. The pico cells of Hunt are disclosed to have a smaller coverage area, forcing fewer users per pico cell, allowing for greater bandwidth per user in the pico cell. In contrast to the present principles, Hunt does not disclose sending signaling information directly from the macro cell to the pico cell upon user connection to the pico cell. Instead, Hunt provides connection information from the macro cell to the mobile terminal. Specifically, “[t]he macro cell 102 offers best support for the control data, as it has sufficient capacity to support the traffic, and covers a wide area so a continuous link can be maintained” and “[b]ecause the control sub-channel 212 is set up with the macro cells BS [base station] 104, this is able to manage the selection of the most appropriate pico cell 106 for use in user data transfer at any one time.” (Hunt, para. 0024). This disclosure indicates that the macro cell handles transmission of control data from the macro cell to the *mobile terminal*, instead of the micro cell as recited in claim 1.

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The applicant respectfully traverses the Examiner's interpretation of the teachings of Hunt. Regarding claim 1 of the present principles, the Examiner has stated that "[t]he pico cell 102 is capable of voice telephony and data communications with a Mobile station 110 (figure 2) using a sub-channel 212 (figure 2)." The applicant respectfully draws the Examiner's attention to paragraph 0023 of Hunt, which states that "control data is passed over a control sub-channel 214 between a terminal 110 and a BS 104 controlling a *macro cell 102*." This is contrary the Examiner's assertion that the pico cell of Hunt receives control information from the Macro cell. Since the control information is passing from the macro cell directly to the mobile terminal, the pico cell has no access to the control information. Therefore, Hunt cannot anticipate, or even suggest "communicating signaling information *directly* between one micro cell and the one macro cell via a third wireless channel" as recited in claim 1.

The Examiner has stated that "there is a communications channel between the secondary station and a primary station, which comprises control and data sub-channels for the respective transmission of control information and user data" and that "[t]he macro cell BS 104 has direct links (i.e. third wireless channel to the pico cell base stations 108 included within the umbrella macro cell 102, and routes data to and from whichever is appropriate for current communications in a manner which is transparent to the network." However, the data routed to the pico cell, as taught by Hunt, is the data requested by the user, and is not signaling information as recited in claim 1. Specifically, paragraph 0029 of Hunt further teaches that "[w]hen there is a data packet to be transmitted to the user, the macro cell 102 routes the data to the identified pico cell 106, and sends the notification to the MS 1120, via the control sub-channel 212 between the macro cell and the MS 110, that it should receive a data packet using the particular data sub channel 214 allocated for use by the pico cell 106."

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This passage from paragraph 0029 of Hunt further indicates that the macro cell determines which pico cell the mobile terminal should download from, and then instructs the *mobile terminal* regarding which pico cell to access to download. Therefore, any communication of control information would necessarily happen *prior* to the mobile terminal accessing the pico cell. Furthermore, while the mobile terminal in Hunt may be able to determine the signal strength of a pico cell, or determine when the mobile terminal has moved into an area serviced by the pico cell, according to paragraph 0029 of Hunt, the mobile terminal will not be able to access the pico cell until the macro cell transmits instructions to the mobile terminal to begin a download from a particular pico cell. Therefore, the communications of the signaling information of Hunt cannot be "in response to access of the micro cell by the mobile communications device" as recited in claim 1.

Independent claim 6 recites a system analogous to the method of independent claim 1, and recites, *inter alia*, "a third wireless channel for *directly* communicating signaling information between the one micro cell and the one macro cell *in response to access of the micro cell by the mobile communications device* to enable the controller to also control the operation of the macro cell." The applicant respectfully asserts that claim 6 is patentably distinct over Hunt, as cited, for at least the same as discussed above for independent claim 1. Furthermore, claims 2-5 and 8-11 currently stand rejected under 35 U.S.C. §102(b). Claims 2-5 depend from independent claim 1, while claims 8-11 depend from independent claim 6, and are therefore patentable for at least the reasons stated for claims 1 and 6, respectively.

Claim 7 currently stands rejected under 35 U.S.C. §103(a) over Hunt, in view of United States Patent No 6,058,302 to Westerberg, et al. However, as claim 7 depends from claim 6,

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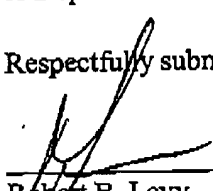
claim 7 includes all of the limitations and features of claim 6, and is thus, patentable over the combination Hunt and Westerberg for at least the same reasons as claim 6.

In view of the foregoing, Applicant respectfully requests that the rejections of the claims set forth in the Office Action of January 4, 2007 be withdrawn, that pending claims 1-12 be allowed, and that the case proceed to early issuance of Letters Patent in due course.

It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant's representatives Deposit Account No.: 07-0832.

Respectfully submitted,

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